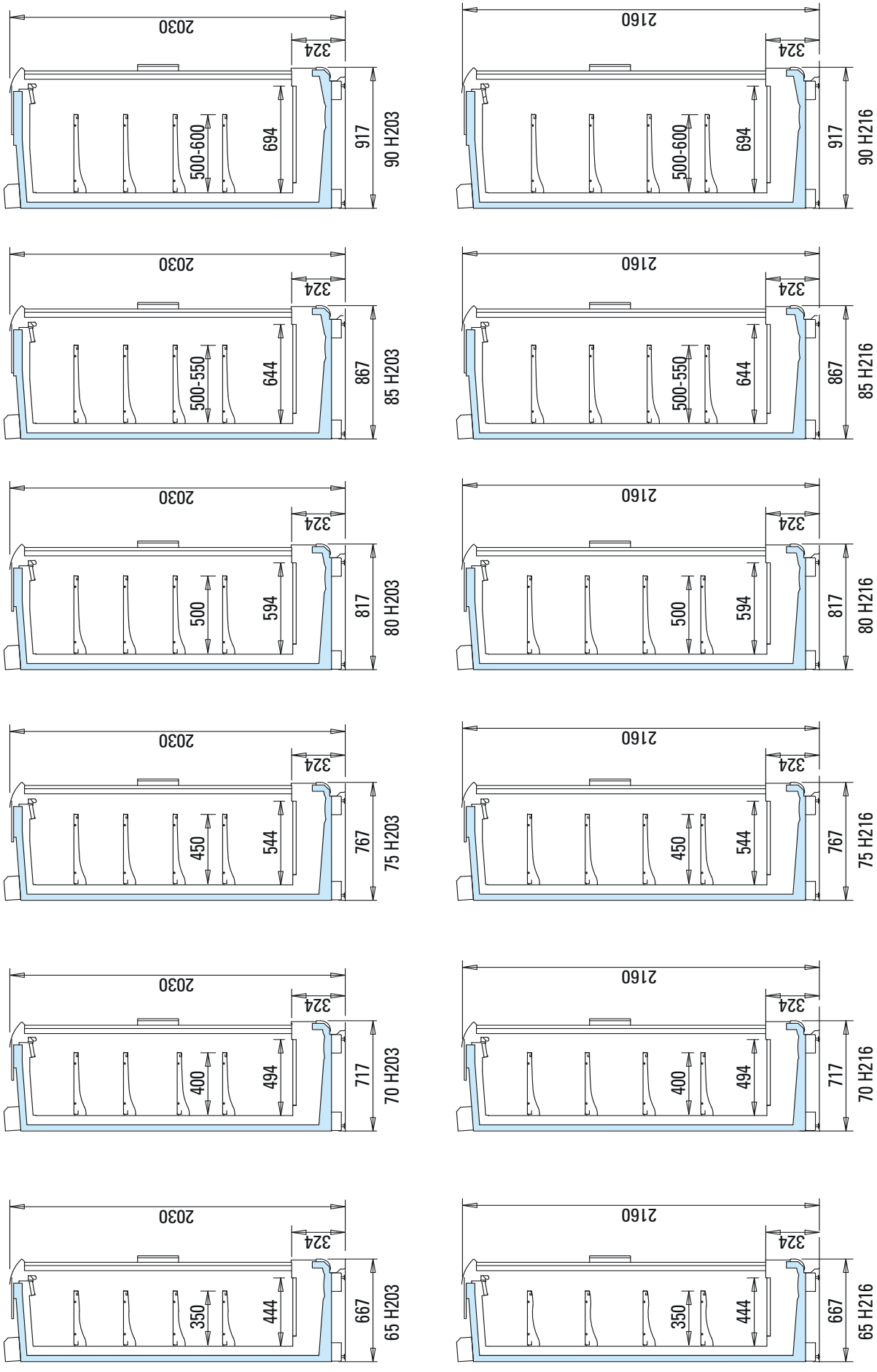
Rif. 1


2030
324
500-600
694
917
90 H203
2160
324
500-600
694
917
90 H216
2030
324
500-550
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867
85 H203
2160
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500-550
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867
85 H216
2030
324
500
594
817
80 H203
2160
324
500
594
817
80 H216
2030
324
450
544
767
75 H203
2160
324
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544
767
75 H216
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400
494
717
70 H203
2160
324
400
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2160
324
350
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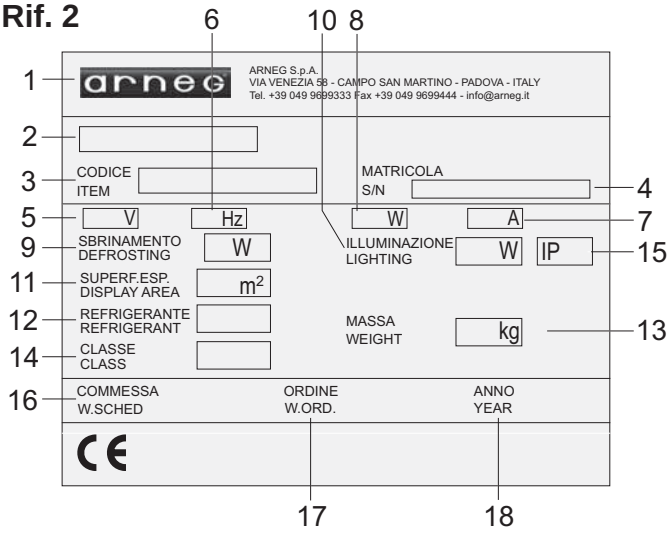
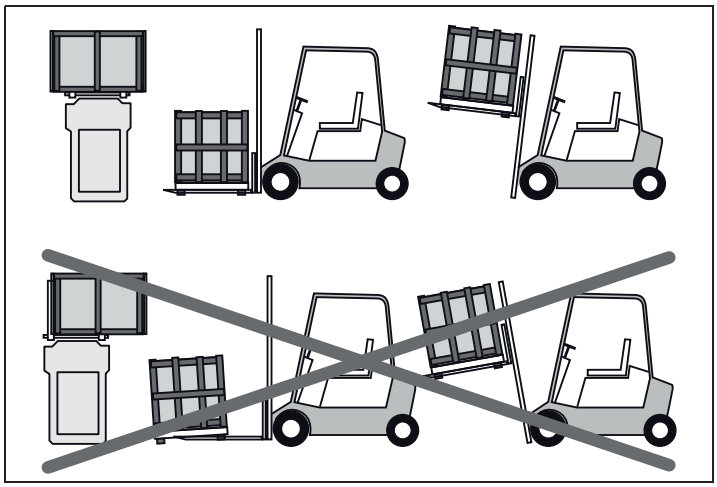
667
65 H216

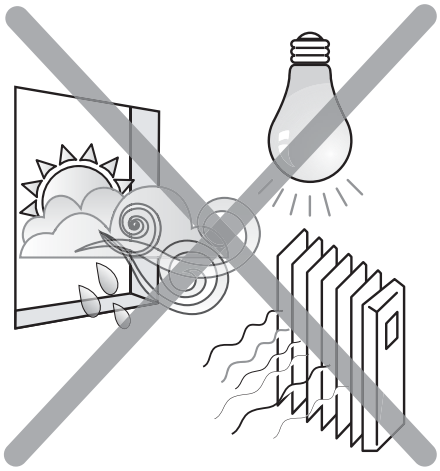
Rif. 2



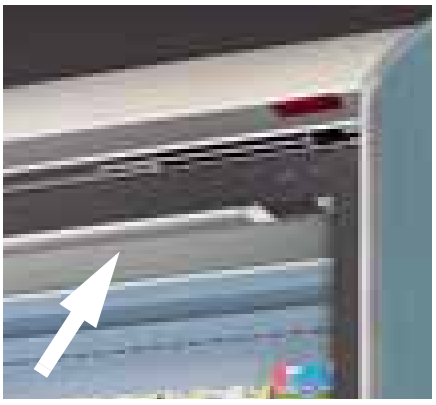
Rif. 4

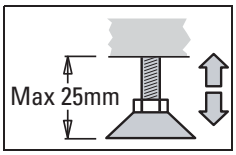
Rif. 3





Rif. 7



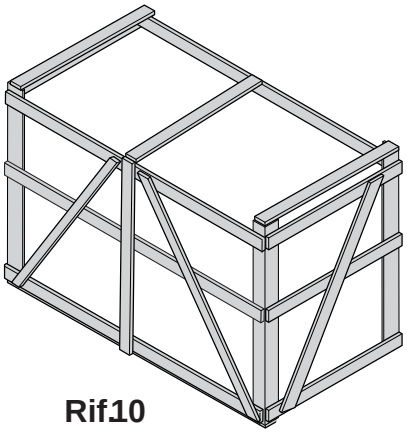


Rif. 5

Rif. 6

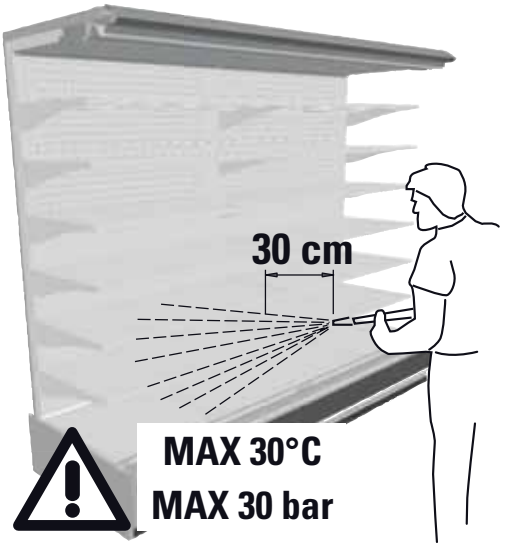
Rif. 8

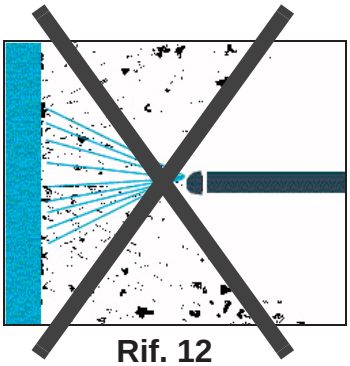
Rif. 9



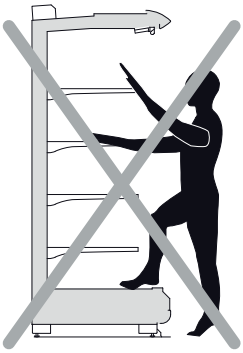
Rif10

Rif.11

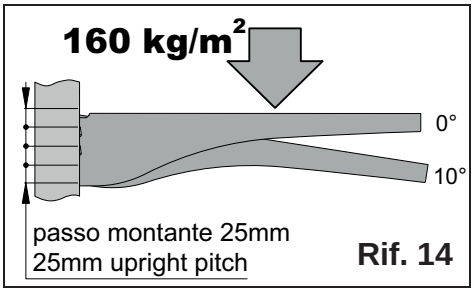




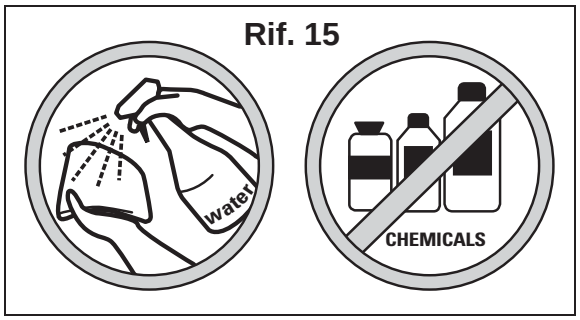
Rif. 12

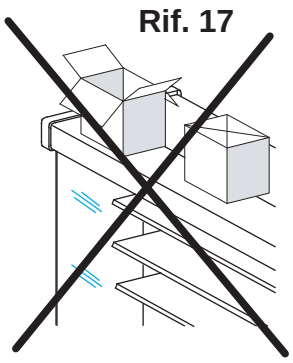


Rif. 13

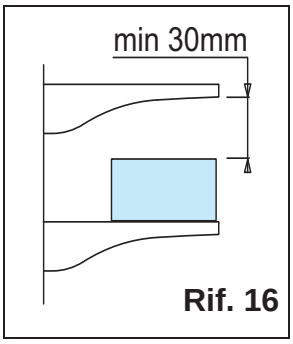


Rif. 14

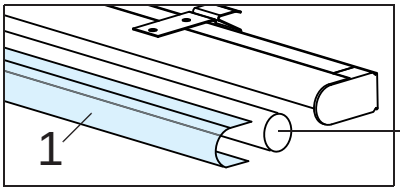




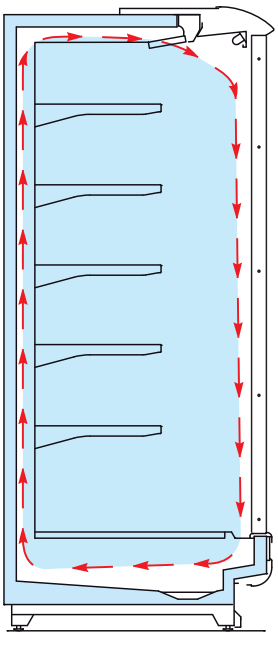
Rif. 17



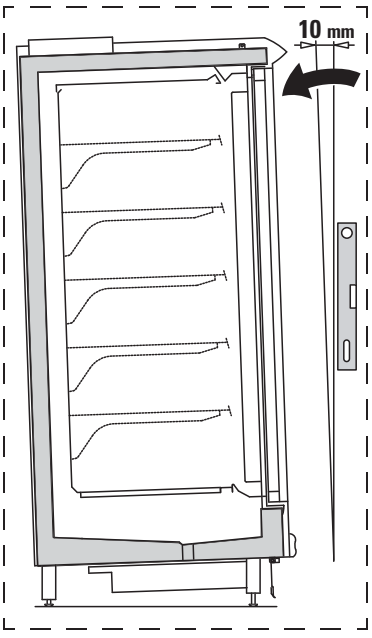
Rif. 16



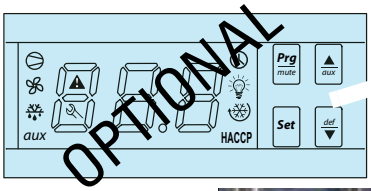
Rif. 18



Rif. 19



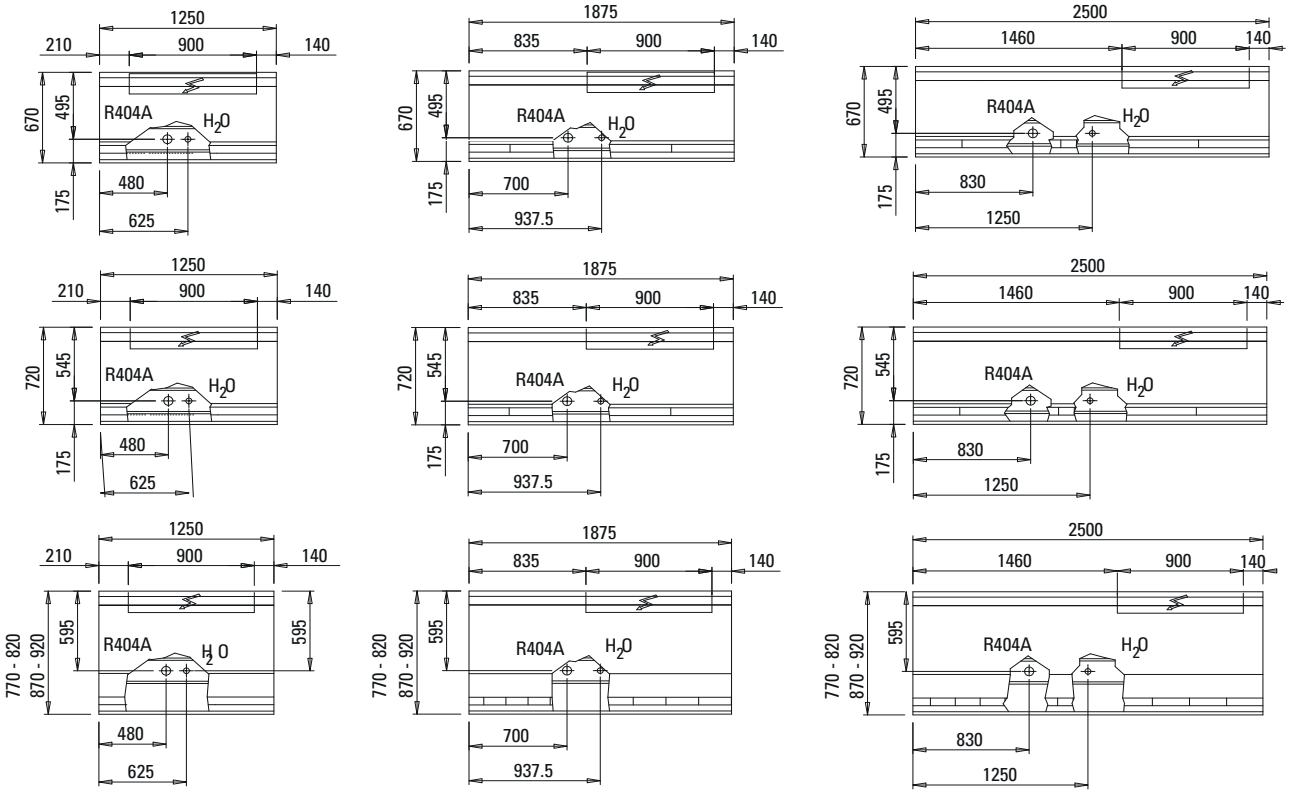
Rif. 20

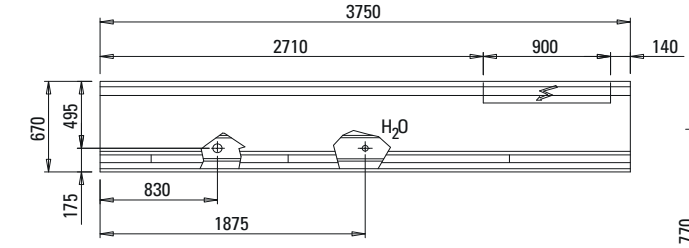


Rif. 21

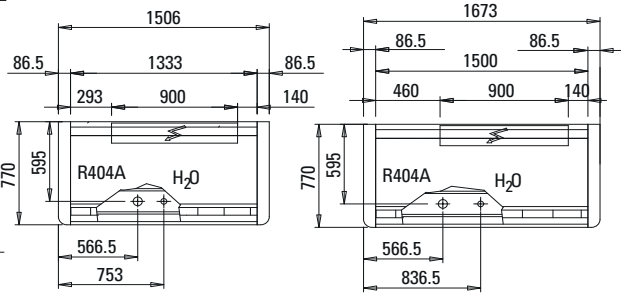
Rif. 22

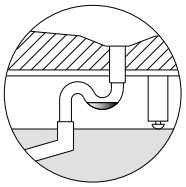
Rif. 23





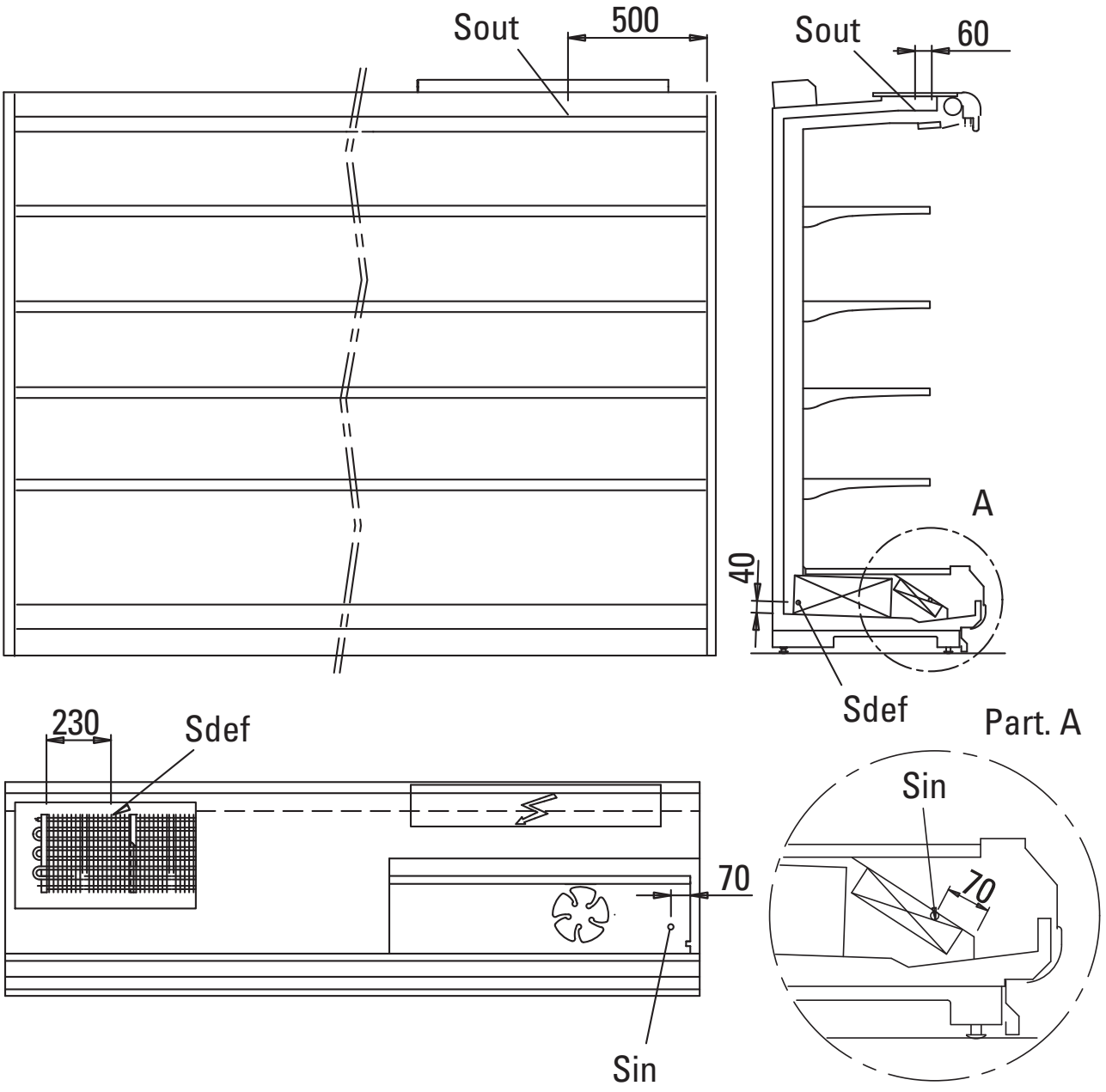
TESTATE/HEAD CASES





Rif. 24

Rif. 25


Sout
500
Sout
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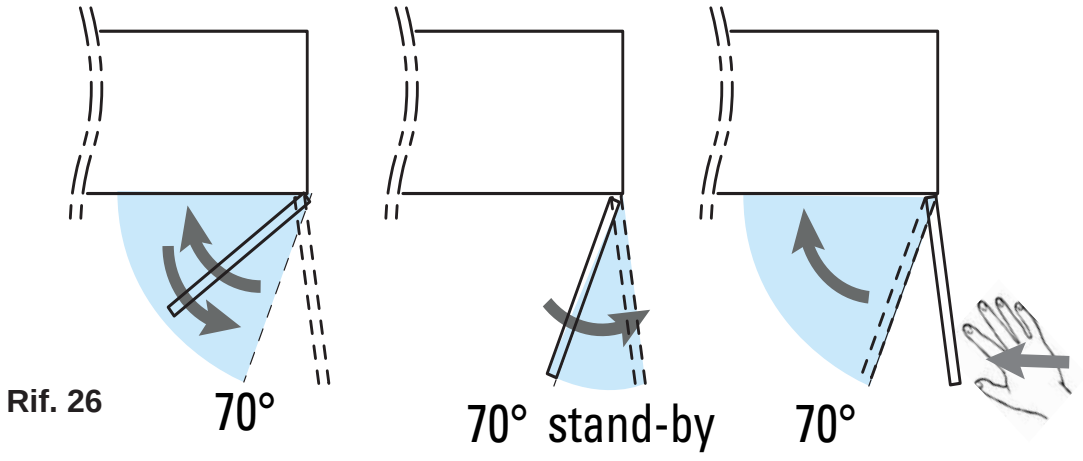
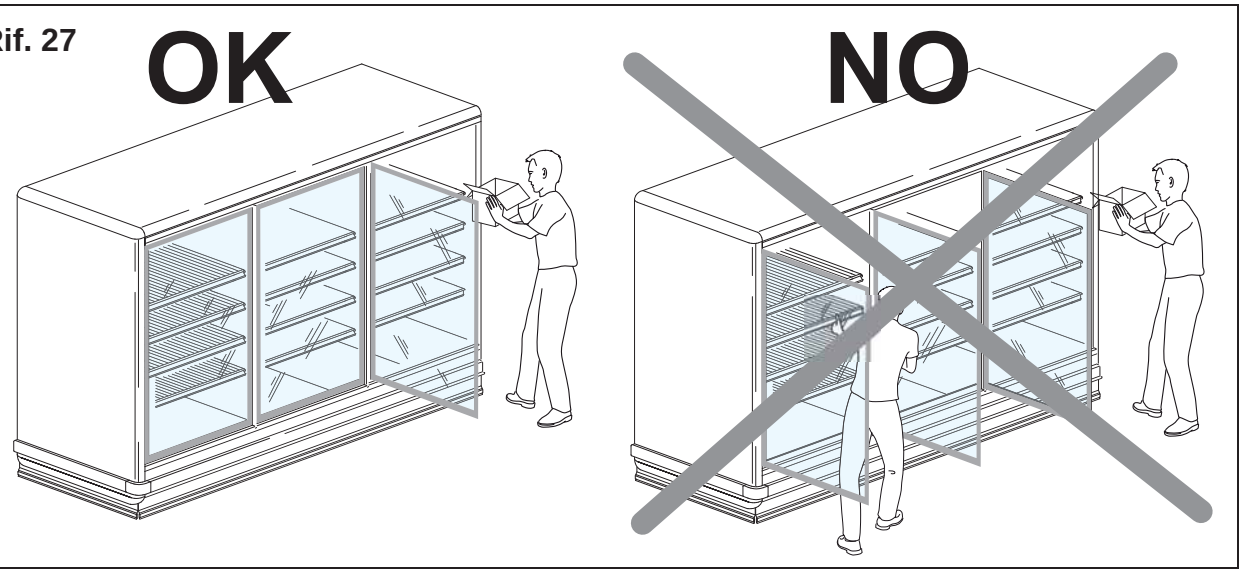
A
40
Sdef
Part. A
230
Sdef
70
Sin
Sin
70

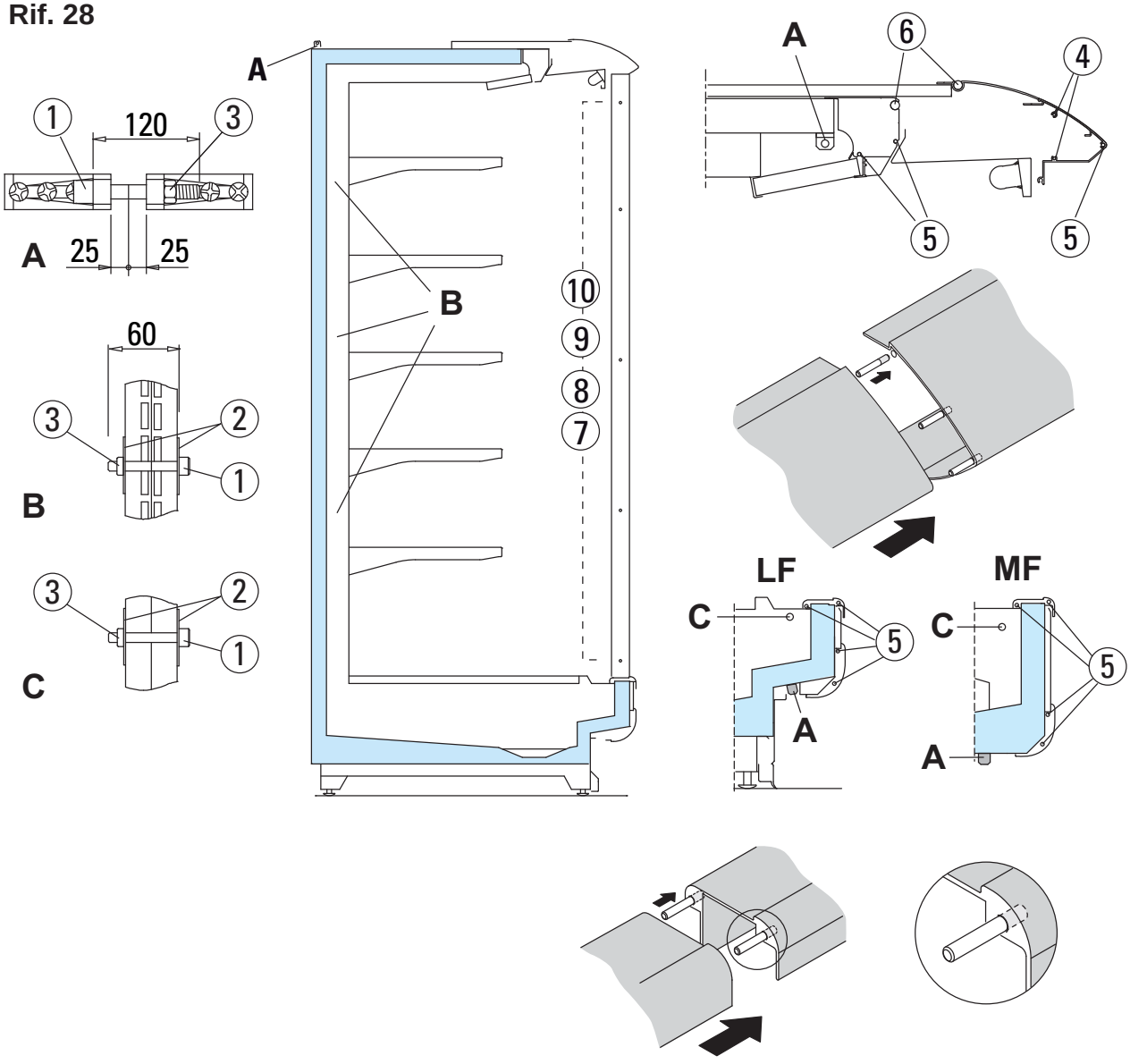

70°
70° stand-by
70°

Rif. 26

Rif. 27

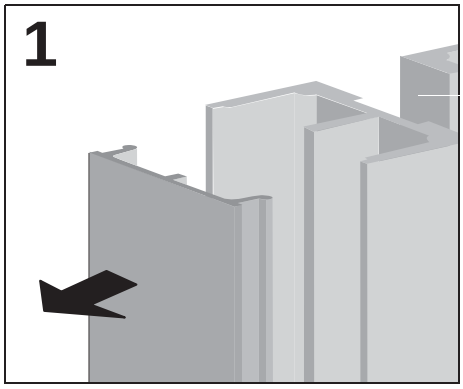


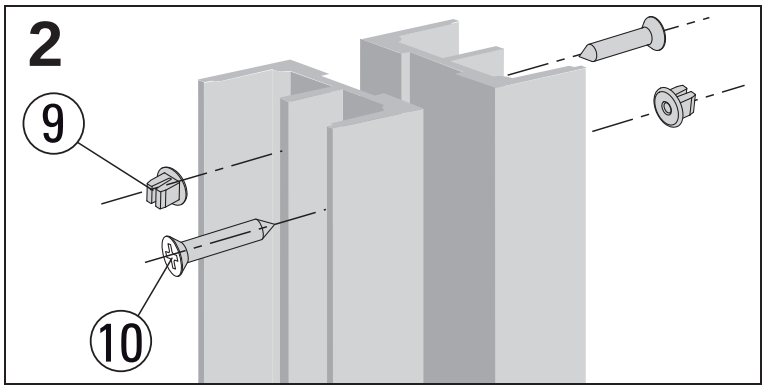
Rif. 28

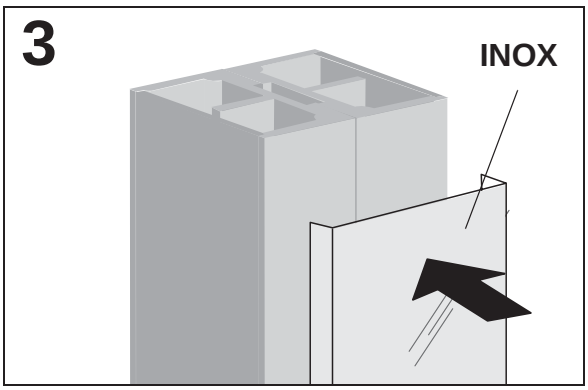


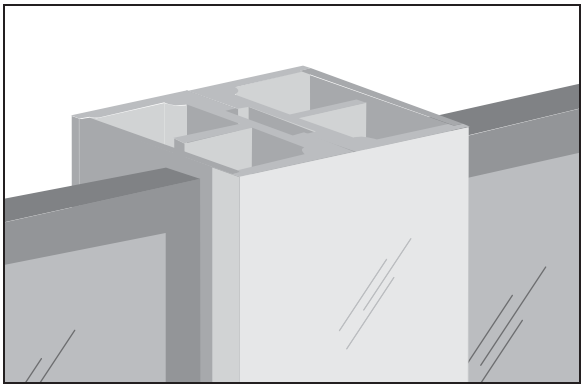
PORTE SCORREVOLI / SLIDING DOORS

Rif. 29

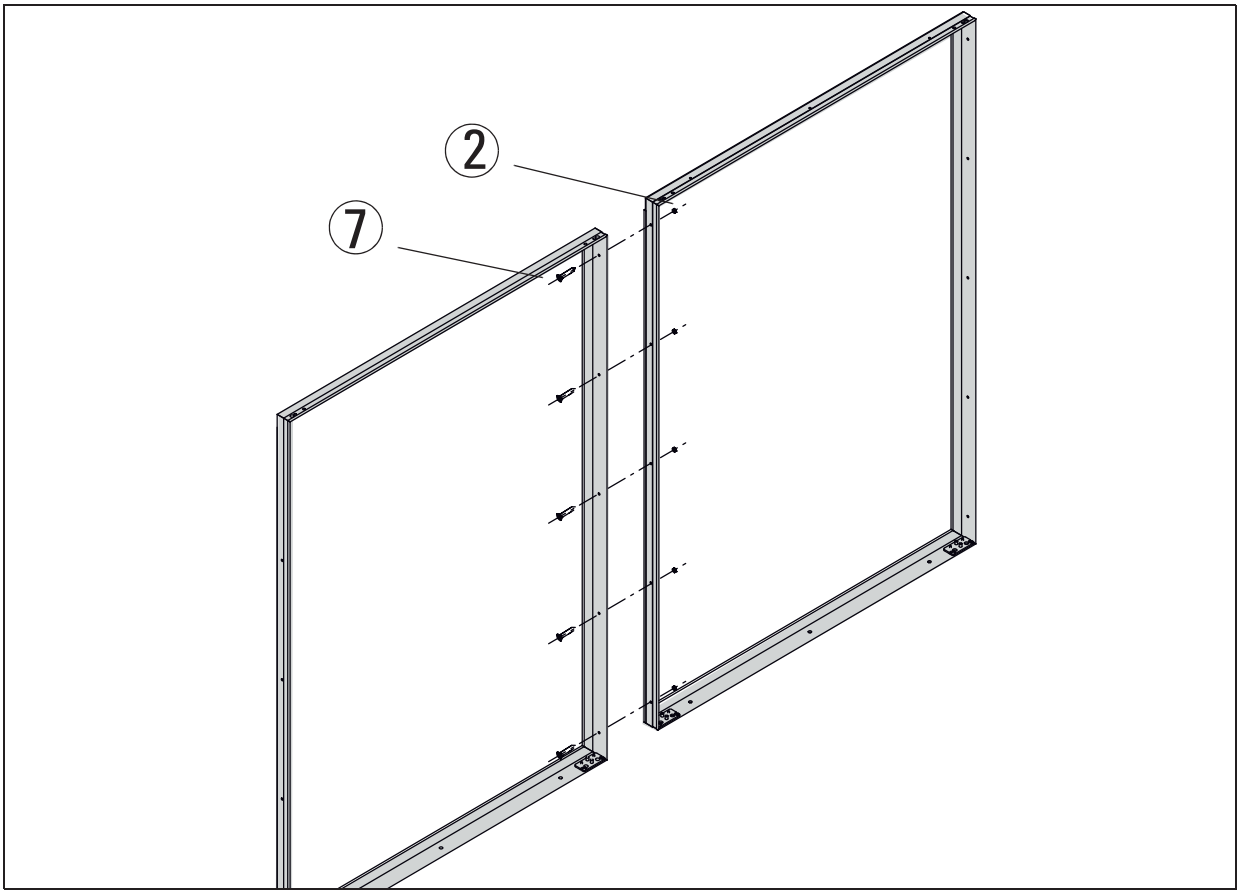




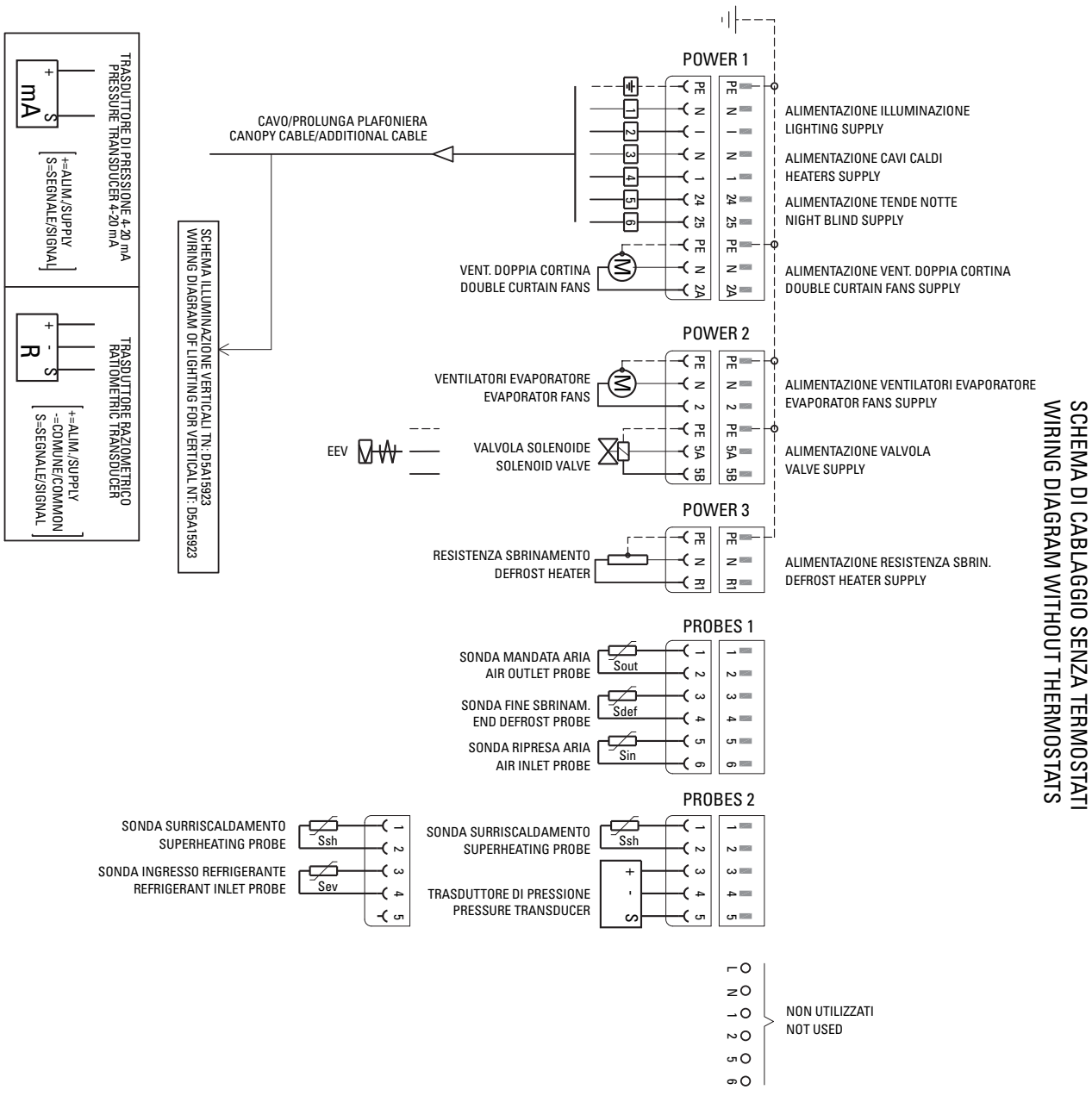




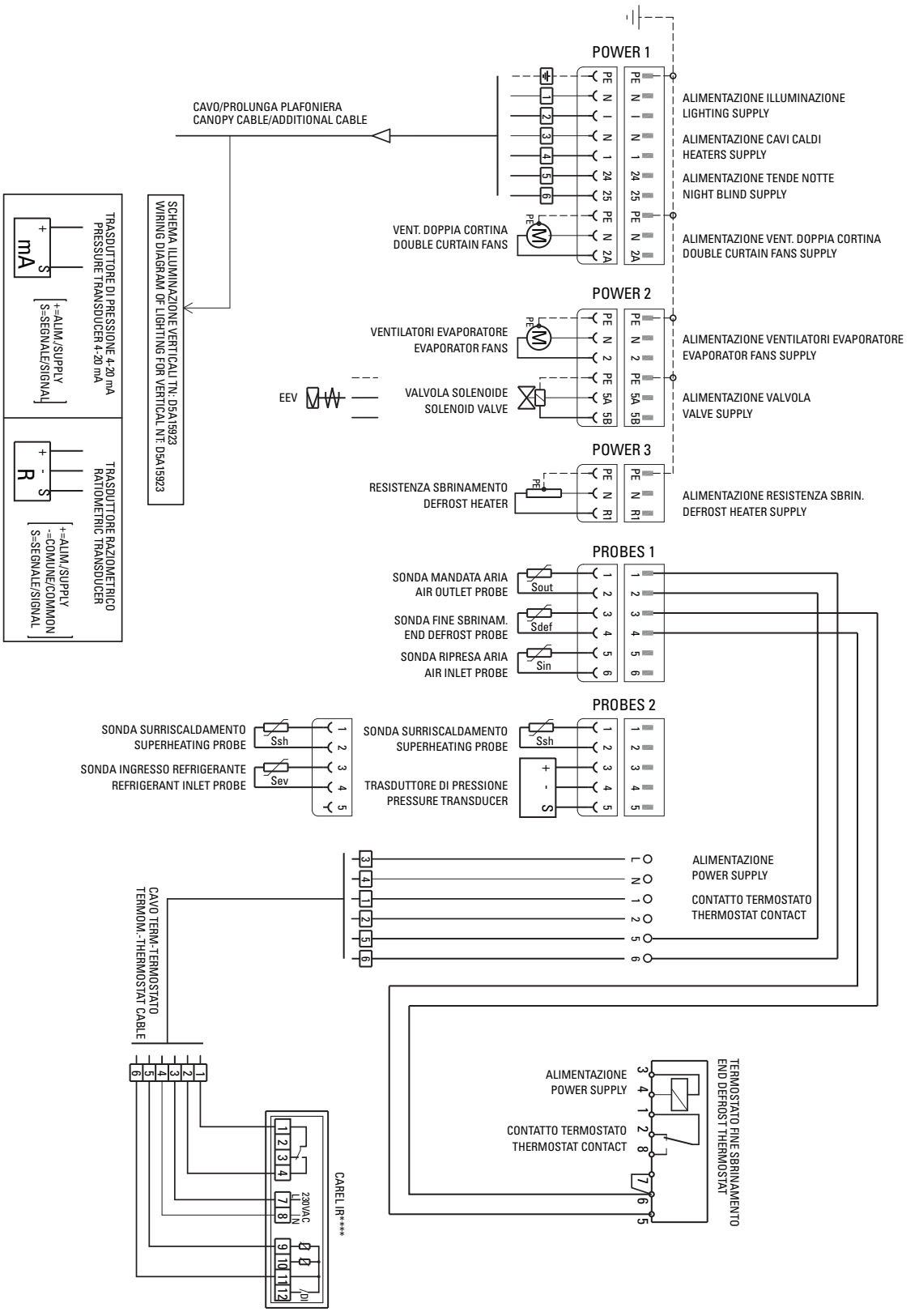
PORTE A BATTENTE/ HINGED DOORS

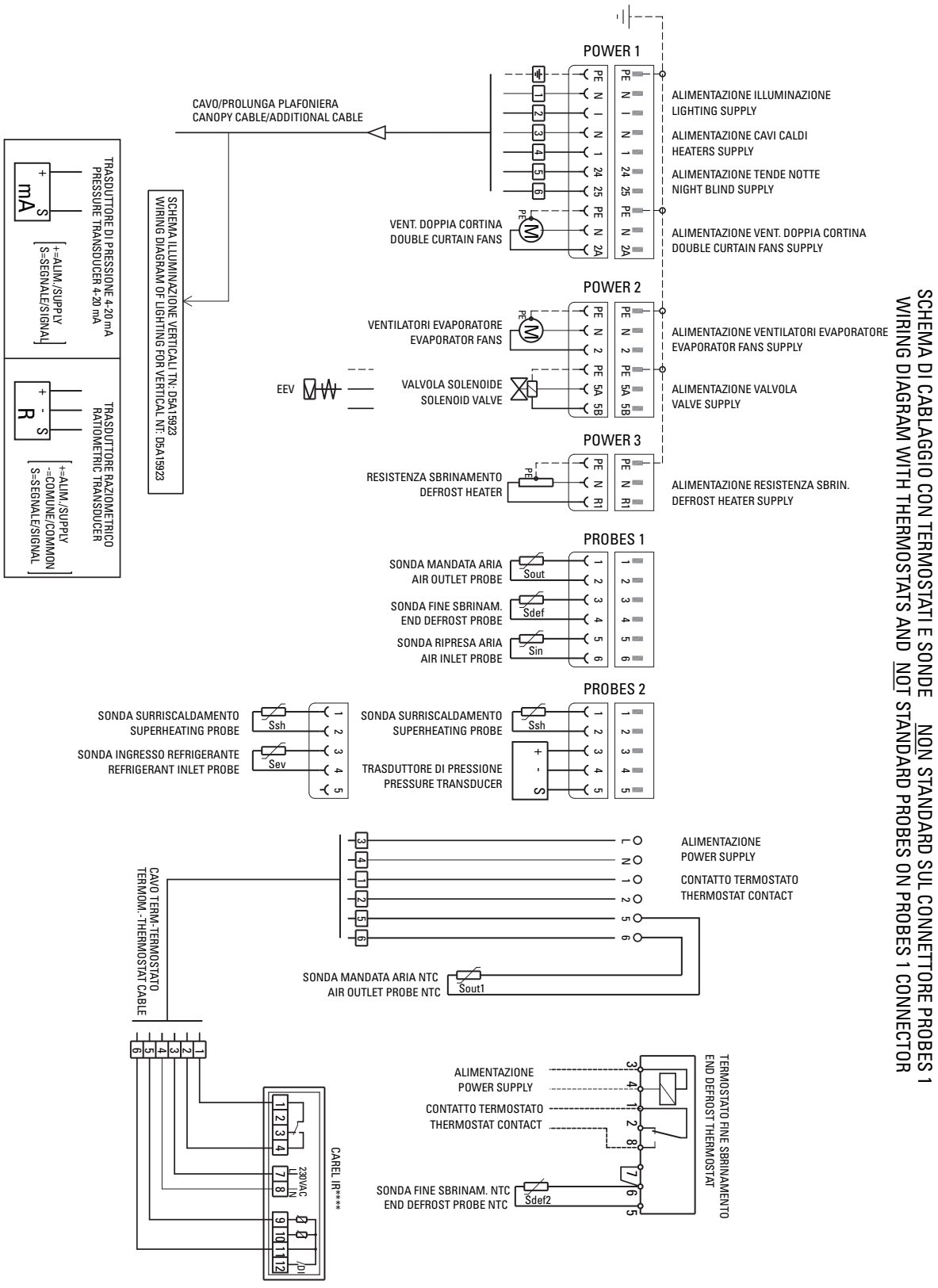


SCHEMI ELETTRICI STANDARD / STANDARD WIRING DIAGRAMS



SCHEMA DI CABLAGGIO CON TERMOSTATI E SONDE STANDARD (NTC 10K 25°C) SUL CONNETTORE PROBES 1
WIRING DIAGRAM WITH THERMOSTATS AND STANDARD PROBES (NTC 10K 25°C) ON PROBES 1 CONNECTOR




SCHEMA DI CABLAGGIO CON TERMOSTATI E SONDE NON STANDARD SUL CONNETTORE PROBES 1
WIRING DIAGRAM WITH THERMOSTATS AND NOT STANDARD PROBES ON PROBES 1 CONNECTOR
POWER 1
ALIMENTAZIONE ILLUMINAZIONE
LIGHTING SUPPLY
ALIMENTAZIONE CAVI CALDI
HEATERS SUPPLY
ALIMENTAZIONE TENDE NOTTE
NIGHT BLIND SUPPLY
ALIMENTAZIONE VENT. DOPPIA CORTINA
DOUBLE CURTAIN FANS SUPPLY
VENT. DOPPIA CORTINA
DOUBLE CURTAIN FANS
CAVO/PROLUNGA PLAFONIERA
CANOPY CABLE/ADDITIONAL CABLE
SCHEMA ILLUMINAZIONE VERTICALI TN: DSA15923
WIRING DIAGRAM OF LIGHTING FOR VERTICAL NT: DSA15923
TRASDUTTORE DI PRESSIONE 4-20 mA
PRESSURE TRANSDUCER 4-20 mA
+=ALIM./SUPPLY
S=SEGNALE/SIGNAL
TRASDUTTORE RAZIOMETRICO
RATIOMETRIC TRANSDUCER
+=ALIM./SUPPLY
-=COMUNE/COMMON
S=SEGNALE/SIGNAL
POWER 2
VENTILATORI EVAPORATORE
EVAPORATOR FANS
ALIMENTAZIONE VENTILATORI EVAPORATORE
EVAPORATOR FANS SUPPLY
EEV
VALVOLA SOLENOIDE
SOLENOID VALVE
ALIMENTAZIONE VALVOLA
VALVE SUPPLY
POWER 3
RESISTENZA SBRINAMENTO
DEFROST HEATER
ALIMENTAZIONE RESISTENZA SBRIN.
DEFROST HEATER SUPPLY
PROBES 1
SONDA MANDATA ARIA
AIR OUTLET PROBE
SONDA FINE SBRINAM.
END DEFROST PROBE
SONDA RIPRESA ARIA
AIR INLET PROBE
PROBES 2
SONDA SURRISCALDAMENTO
SUPERHEATING PROBE
SONDA INGRESSO REFRIGERANTE
REFRIGERANT INLET PROBE
SONDA SURRISCALDAMENTO
SUPERHEATING PROBE
TRASDUTTORE DI PRESSIONE
PRESSURE TRANSDUCER
ALIMENTAZIONE
POWER SUPPLY
CONTATTO TERMOSTATO
THERMOSTAT CONTACT
CAVO TERM-TERMOSTATO
TERMOM.-THERMOSTAT CABLE
SONDA MANDATA ARIA NTC
AIR OUTLET PROBE NTC
ALIMENTAZIONE
POWER SUPPLY
CONTATTO TERMOSTATO
THERMOSTAT CONTACT
SONDA FINE SBRINAM. NTC
END DEFROST PROBE NTC
TERMOSTATO FINE SBRINAMENTO
END DEFROST THERMOSTAT
CAREL IR****
230VAC

Modello, Model, Modell, Modele, Modelo, Модель		65/200				65/216				70/200				70/216				75/200				75/216			
Lunghezza senza spalle, Length without ends, Länge ohne Seiten, Longeur sans joues, Longitud sin laterales, Длина без боковин	mm	1250	1875	2500	3750	1250	1875	2500	3750	1250	1875	2500	3750	1250	1875	2500	3750	1250	1875	2500	3750	1250	1875	2500	3750
Temp. di esercizio, Working temperature, Betriebstemperatur, Temp. de fonctionnement, Temperatura de trabajo, Рабочая температура	°C	0°C/+2°C +2°C /+4°C																							
Temperature ammissibili, Allowed temperature, Zulässige Temperaturen Températures admissibles, Temperaturas admitidas, Допустимые температуры. - (Ts) 97/23 CE -	°C	Max +32°C / Min - 10°C																							
Superficie di esposizione orizzontale, Horizontal display surface, Gesamte Ausstellefläche, Surface d 'exposition horizontale , Superficie de exposición de apoyo, Горизонтальная площадь экспозиции	m^2	2,3	3,45	4,6	6,9	2,3	3,45	4,6	6,9	2,61	3,92	5,22	7,83	2,61	3,92	5,22	7,83	2,92	4,39	5,85	8,77	2,92	4,39	5,85	8,77
Volume netto, Net volume, Netto inhalt, Volume net, Volumen neto, Чистый вес	dm^3	717	1076	1435	2152	774	1162	1549	2323	816	1224	1631	2447	881	1321	1762	2642	914	1371	1828	2742	987	1481	1974	2962
Refrigerante, Refrigerant, Kühlmittel, Réfrigérant, Refrigerante, Хладагент		R404A (optional R 134a, R410A, CO2, Glicole)																							
Massima pressione ammissibile, Max allowed pressure, Maximal zulässiger Druck, Pression maximale admissible, Máxima presión admitida, Максимально допустимое Давление. - (Ps) 97/23 CE -	bar	29 bar (CO2-60 bar)																							
Tipo di sbrinamento, Defrosting type, Abtautyp, Type de dégivrage, Tipo descongelation, Тип оттаивания		Naturale, Off-cycle, Zeitabtauung, Dégivrage naturel, Parada simple, Простая остановка																							
Livello di rumorosità , Noise level, Schallpegel, Niveau de bruit, Nivel de ruido, Уровень шума	db (A)	< 65																							
Contenuto modificabile senza preavviso, Content that could be change without notice, Inhalt Veränderbar ohne Vorankündigung, Contenu modifiable sans préavis, Contenido modificable sin previo aviso, Содержание изменяется без предупреждения																									

Modello, Model, Modell, Modele, Modelo, Модель		80/200				80/216				85/200				85/216				90/200				90/216			
Lunghezza senza spalle, Length without ends, Länge ohne Seiten, Longeur sans joues, Longitud sin laterales, Длина без боковин	mm	1250	1875	2500	3750	1250	1875	2500	3750	1250	1875	2500	3750	1250	1875	2500	3750	1250	1875	2500	3750	1250	1875	2500	3750
Temp. di esercizio, Working temperature, Betriebstemperatur, Temp. de fonctionnement, Temperatura de trabajo, Рабочая температура	°C	0°C/+2°C +2°C /+4°C																							
Temperature ammissibili, Allowed temperature, Zulässige Temperaturen Températures admissibles, Temperaturas admitidas, Допустимые температуры. - (Ts) 97/23 CE -	°C	Max +32°C / Min - 10°C																							
Superficie di esposizione orizzontale, Horizontal display surface, Gesamte Ausstellefläche, Surface d 'exposition horizontale , Superficie de exposición de apoyo, Горизонтальная площадь экспозиции	m^2	3,24	4,85	6,47	9,71	3,24	4,85	6,47	9,71	3,3	4,95	6,6	9,9	3,3	4,95	6,6	9,9	3,36	5,04	6,72	10,08	3,36	5,04	6,72	10,08
Volume netto, Net volume, Netto inhalt, Volume net, Volumen neto, Чистый вес	dm^3	1012	1518	2024	3037	1094	1640	2187	3281	1029	1543	2058	3087	1110	1665	2221	3331	1046	1568	2091	3137	1127	1691	2254	3381
Refrigerante, Refrigerant, Kühlmittel, Réfrigérant, Refrigerante, Хладагент		R404A (optional R 134a, R410A, CO2, Glicole)																							
Massima pressione ammissibile, Max allowed pressure, Maximal zulässiger Druck, Pression maximale admissible, Máxima presión admitida, Максимально допустимое Давление. - (Ps) 97/23 CE -	bar	29 bar (CO2-60 bar)																							
Tipo di sbrinamento, Defrosting type, Abtautyp, Type de dégivrage, Tipo descongelation, Тип оттаивания		Naturale, Off-cycle, Zeitabtauung, Dégivrage naturel, Parada simple, Простая остановка																							
Livello di rumorosità , Noise level, Schallpegel, Niveau de bruit, Nivel de ruido, Уровень шума	db (A)	< 65																							
Contenuto modificabile senza preavviso, Content that could be change without notice, Inhalt Veränderbar ohne Vorankündigung, Contenu modifiable sans préavis, Contenido modificable sin previo aviso, Содержание изменяется без предупреждения																									

Installation and User Manual

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1. Informational symbols

Before reading the manual, take a moment to learn the symbols:

This symbol indicates dangers and actions that should **always** be avoided during use, maintenance or in any situation, as they could cause serious injury or death.

This symbol indicates instructions, rules, advice, and communications that each person assigned to use the unit (in reference to their individual responsibilities) must respect during the entire time they are using the unit (installation, use, maintenance, dismantling, etc.).

2. Prohibitions and prescriptions

The Installation and User Manual should be read carefully so that the operator, in the event of malfunction, is able to provide precise information to Technical Support.

- **Before carrying out any maintenance work on the refrigerator unit, please ensure that the electrical supply is disconnected.**
- **These units are designed for use only in closed environments**
- **Take great care over all working manoeuvres (loading, unloading, cleaning, counter service, maintenance, etc.). and always apply maximum diligence, using appropriate protective equipment for the various operations.**
- **The refrigeration unit is intended to maintain the temperature of the goods displayed and not to reduce it. Foodstuffs should only be placed inside if they are already cooled to their respective conservation temperatures. As such, products that have been warmed up must not be placed in the unit.**
- **The units are designed and built to store and display only fresh and frozen foods, ice creams, cooked and pre-cooked items (canteens). Do not introduce any type of goods other than those specified such as pharmaceutical products, fishing bait, etc.**
- Check that the temperature and relative humidity values do not exceed specifications. For this reason it is essential that the air-conditioning, ventilation, and heating systems in the sales point are kept at maximum efficiency.
- Limit the speed of the ambient air near the unit openings to less than 0.2 m/s;
- Avoid having air currents or the output of the air conditioning system aimed directly towards unit openings.
- Only place goods into the cabinet that have already been cooled to the temperature normally applicable to the cold chain and check that the cabinet is always able to maintain that temperature.
- Respect the load limit. Do not overload the cabinet.
- Rotate food products by loading the cabinet in such a way that the goods displayed for longest are sold before new arrivals.
- With the help of a specialised technician, eliminate any problems found (loose screws, blown bulbs, etc.).
- Check the flow of defrosted water (unblock drains, clean any filters, check siphons, etc.).
- Dispose of defrosted water or water used for washing through the drains or purification system in accordance with current legislation as this may come into contact with pollutants due to the nature of the product, any residues, accidental breakages of casing containing liquids and the use of non-permitted detergents.

- If abnormal condensation forms, inform the refrigeration technician immediately.
- Carry out all preventive maintenance operations punctually.

- **DO NOT** use the unit barefoot
- **DO NOT** touch the unit with wet or damp hands or feet
- **DO NOT** remove protective covers or panels that require the use of tools to be removed. More specifically, do not remove the electrical panel cover. These operations must always be carried out by specialised technicians.
- **DO NOT** obstruct the air intake openings.
- **DO NOT** walk on the top of the unit.
- **DO NOT** use your feet to climb onto the front of the unit, for any reason. If necessary, use an appropriate and suitable ladder in order to reach the loading points. Danger: falls and serious injury.
- **DO NOT** use spotlights with incandescent bulbs aimed directly at the unit. Danger: overheating the merchandise.
- Exposed merchandise should not be in direct sunlight. Danger: alteration of merchandise.
- Limit the temperature of radiating surfaces located in the sales point, e.g. insulating ceilings.
- **IN THE CASE OF A GAS LEAK OR FIRE:**
  Do not stay in the room where the cabinet is located if it is not appropriately ventilated. Disconnect the unit by means of the general switch upstream of the appliance.
  DO NOT USE WATER TO PUT OUT THE FLAMES, USE ONLY DRY EXTINGUISHERS.

ANY OTHER USE NOT EXPLICITLY INDICATED IN THIS MANUAL IS TO BE CONSIDERED DANGEROUS. THE MANUFACTURER SHALL NOT BE HELD RESPONSIBLE FOR ANY DAMAGES THAT MAY OCCUR FROM IMPROPER, ERRONEOUS, OR UNREASONABLE USE.
USEFUL TELEPHONE NUMBERS:
SWITCHBOARD +39 0499699333 - FAX +39 9699444 - CALL CENTRE 848 800225

3. Purpose of the Manual/Field of Application - Interested Parties

This instruction manual contains a description of the **Osaka 2** line of refrigeration units, manufactured by ARNEG Spa.
The following information provides instructions with regard to:

- using the cabinet
- technical specifications
- installation and assembly
- operator information
- maintenance operations
- safety information

The manual should be considered part of the unit and must be kept for its entire working life.
The manufacturer is relieved from all liability in the following situations:

- improper use
- incorrect installation - not completed in accordance with the regulations specified
- power supply faults
- serious lack of maintenance
- unauthorised alterations and operations
- use of non-original spare parts
- partial or complete lack of compliance with the instructions.

This manual must be the responsibility of an assigned person, stored in an appropriate location, known to all assigned workers and maintenance employees, so that it can be consulted whenever needed.
In the event of transfer to third parties, it must be delivered to the new user or owner, duly informing the suppliers in a timely manner. If lost or damaged, please contact the supplier.
This manual is intended for:

QUALIFIED OPERATORS: qualified individuals, instructed in the use, adjustment, cleaning, and maintenance of the unit.

SPECIALISED TECHNICIANS: trained technicians, authorised to carry out extraordinary maintenance, repair, replacement, and tuning operations who are aware of the risks they are exposed to in carrying out said operations and able to adopt all the measures appropriate to protect themselves and others, minimising damage with respect to the risks that these operators have.
Where not specified, the section is applicable to both types of users
The contents of this manual represent the current technical and technological status used in manufacturing the unit, and valid at the time the unit in question was sold. Therefore, it cannot be considered obsolete in the case of later updates connected to new regulations or knowledge. **Anyone using this unit must read this manual.**

4. Presentation - Proper use (Rif. 1)

The unit is intended for use by qualified personnel that have been instructed and trained by their employer with regards to use and the risks that come with it.
The Osaka 2 **refrigeration unit line designed for foodstuffs consists of vertical wall display units closed at the front with wing doors, with remote condenser unit, perfect for the storage and sale of salamis, dairy produce, ready-prepared fruits and vegetables, and meat.**

- Electrical appliances can be dangerous to health. Current laws and regulations must be respected during installation and use.
- Removing protective covers or panels requiring tools for removal is prohibited.

DO NOT allow the following types of people to use the unit:
- children
- persons who cannot safely use the unit without supervision or instructions
- disabled individuals
- employees who are not sober or are under the effect of narcotics

- Carefully read the manual before use and instruct assigned employees with regards to the various operations (transport, installation, maintenance, etc.), in line with their assigned responsibilities, and in accordance with the instructions contained in the manual.
- The Client or employer assumes full responsibility regarding the qualification and mental and/or physical state of the employees assigned to use and maintain the unit.
- This documentation **CANNOT** in any way serve as a substitute for a lack of education or intelligence in the personnel that interacts with the equipment.
- The units are designed and built to store and display only fresh and frozen foods, ice creams, cooked and pre-cooked items (canteens). Do not introduce any type of goods other than those specified such as pharmaceutical products, fishing bait, etc.

5. Standards and certifications

All the refrigeration unit models described in the user manual for the **Osaka 2** series meet the essential requirements for safety, health, and protection, as required by the following European directives and laws:

- **Machines Directive 2006/42 EC;**
  applied EN norms: EN ISO 14121:2007; EN ISO 12100-1:2005; EN ISO 12100-2:2003
- **Electromagnetic Compatibility Directive 2004/108/EC;**
  applied EN norms: EN 61000-3-2:2006; EN 61000-3-12:2005; EN 55014-1:2006; EN 55014-2:1997;
- **Low Voltage Directive 2006/95/EC;**
  applied EN norms: EN 60335-1:2008; EN 60335-2-89 :2002/A2:2007

European Regulation EC-1935/2004 on materials and articles intended to come into contact with food - standards applied: EN 1672-2

They are excluded from the field of application of Directive **EEC 97/23 (PED)** on the basis of that specified by Article 3 paragraph 3 of the Directive.

In the case that the original copy of the Declaration of Product Conformity provided with the product is lost, it is possible to download a copy by completing the form found at the following website: **http://www.arneg.it/conformity**

The performance of these refrigeration units has been determined using tests carried out in accordance with **UNI EN ISO 23953-2: 2006** regulations, in the environmental conditions corresponding to climate class 3 (25 °C , 60% R.H.)

Environmental climatic classes according to UNI EN ISO 23953 - 2

Climatic class	Temp. dry bulb	Relative humidity	Dew point
1	16°C	80%	12°C
2	22°C	65%	15°C
3	25°C	60%	17°C
4	30°C	55%	20°C
5	40°C	40%	24°C
6	27°C	70%	21°C

6. Identification - Plate data (Rif. 2)

A serial plate is affixed behind the unit, stating all characteristic data:
1) Manufacturer's name and address
2) Unit name and length
3) Unit code
4) Unit serial number
5) Voltage supply
6) Supply frequency
7) Current used when operating
8) Electrical power used when operating during refrigeration phase (fans+hot cables+lighting)
9) Electrical power used when operating during defrost phase (armoured resistances+hot cables+fans+lighting)
10) Lighting power (where applicable)
11) Net display surface
12) Type of refrigerant fluid with which the system functions
13) Mass of refrigerant gas with which each system has been loaded (only for units with built-in motor)
14) Environmental climatic class and temperature of reference
15) Humidity protection class
16) Unit manufacturing order number
17) Unit production order number
18) Unit year of production

In the case of a request for technical assistance, please provide the following information:product name (Rif. 2 - 2); serial number (Rif. 2 - 4); work order number (Rif. 2 - 16).

7. Transport - *specialised technician* -

Loading/unloading operations must always be carried out by qualified personnel able to check weights, exact lifting points, and the most appropriate means of transport, both in terms of safety and capacity. The cabinets are supplied on a wooden platform frame to the base for movement with forklift trucks. Use a manual or electrical forklift truck that is suitable for moving the cabinet in question. It must have a nominal capacity of at least 1,000 kg.

- Always place the forks at the indicated points in order to avoid the risk of overturning, and always completely insert the forks.
- No unnecessary personnel should be present in the lifting area.
- Balance the weight of the unit so as to ensure that the load remains in equilibrium (Rif. 3)

DO NOT use transportation devices to lift:
- with a capacity of less than 1,000 kg
- with inappropriate characteristics or that have been affected by use
- with non-standard or worn wires or cables

Transportation procedures that differ from that indicated are **prohibited**.

8. Storage

- **DO NOT** store the units in uncovered areas where they are subject to weathering and direct sunlight. Exposure to ultraviolet rays leads to permanent deformation of the plastic materials and damages the unit's components.
- The units must be stored in closed areas, at a temperature between **-25°C and +55°C** and with relative humidity between **30% and 90%**.
- Before storing, check that the packaging is intact and that it doesn't show any defects that could compromise the preservation of the units.

9. Receipt, unpacking, initial cleaning - *qualified operator* -

Before starting any unpacking operations, take all possible precautions to avoid injury to the operator.
The unit may be provided packaged in one of the following ways:
- With a wooden frame fixed to the base and a nylon covering held in place by straps (standard) (Rif. 8);
- With cardboard covering (upon request) (Rif. 9);
- With a wooden cage (upon request) (Rif. 10).

Upon acceptance of the cabinet:
- Ensure that the packaging is intact and there is no obvious damage;
- Unpack, ensuring that the unit is not damaged;
- Check that all parts of the unit are intact;
- If any damage is found, immediately contact your supplier;
- Slowly remove the protective film, taking care to not rip it, in order to avoid leaving traces of glue. If this occurs anyway, they can be removed using appropriate solvents.
- Clean for the first time using neutral products. Dry with a soft cloth. Do not use any abrasive substances or metal sponges;

For correct disposal of the packaging, note that it consists of: Wood - Polystyrene - Polythene - PVC - Cardboard.

- **DO NOT use alcohol to clean the methacrylate parts (Plexiglas).**
- During the unpacking operations, do not leave packaging elements such as nails, wood, staples, nylon, etc. lying around and tools used for the operation such as pliers, scissors, and pincers should not be left in the work area, as they could cause injury or wounds.
- These items should be removed using appropriate methods and placed in the relevant waste collection locations.

10. Installation and environmental conditions - *specialised technician* -

Any change to the installation described here must be authorised by ARNEG Spa.

To guarantee that the technicians assigned to install the unit work safely, the use of protective tools and clothing required under the safety regulations or laws in effect in the country where it is installed is recommended. In any case, always use appropriate equipment and clothing, such as: **safety shoes, protective gloves, a level.**
For installation, please proceed as follows:
- carefully inspect the installation area, removing any danger(s) to the operator:

Do not position the cabinet:
- in environments with the presence of explosive gaseous substances;

- outdoors and therefore where there are atmospheric agents;
- near heat sources (in direct sunlight, near heating systems, incandescent lights, etc.)
- near air currents (near doors, windows, air-conditioning/heating systems, etc.) exceeding speeds of **0.2 m/sec**.

Remove the wooden supports on the bottom (used for transportation) and attach the adjustable feet (Rif. 5) positioning them so that the unit is horizontal, using a level (Rif. 6) to check the alignment.
Before connecting the unit to the electricity, ensure that the plate data corresponds to the characteristics of the electrical system to which it is to be connected.
For the unit to function properly, the temperature and relative humidity must not exceed the limits for climate class 3 **(+25°C; R.H.** 60%) as established in EN-ISO 23953 - 2 regulations, under which the unit was tested.

- **Multiplex up to 3 cabinets on the same electrical and refrigeration supply line (1 master + 2 slaves)**
- **The unit must be assembled with an inclination towards the wall of at least 10mm (Rif. 20)**
- **If the unit is moved, repeat the levelling process, as improper levelling could compromise the unit's operations.**
- **The unit must be levelled both in the front and in the back.**

11.Multiplexing cabinets - *specialised technician* -

- **Before multiplexing, make sure that the units are level and that doors and handles are perfectly aligned.**

To multiplex two or more units, proceed as follows:

- Disassemble the sides (if present).
- Position the cabinets side by side
- Remove the back panels to gain access to the rise holes
- Join the rises and brackets using the screws supplied
- Replace the back panels.
- Check that the aligning plugs are inserted in the appropriate housings.
- Sliding doors (Rif. 29): after completing multiplexing of the frames, apply the provided stainless steel plate between the frames, in the internal part of the unit.

12.Electrical connection - *specialised technician* -

BEFORE STARTING ANY OPERATION, FIRST DISCONNECT THE SYSTEM FROM THE POWER SUPPLY! The electrical system must be earthed!

- The systems must be completed in accordance with the regulations that govern construction, installation, use, and maintenance as envisaged under the norms in effect in the country where the unit is installed.
- ARNEG Spa declines any responsibility with regards to the user and third-parties for damages caused by breakdowns or malfunctioning of the systems installed upstream to the unit and for damages caused by the same due to causes directly attributable to malfunctioning of the electrical system.
- The unit must be protected upstream by an automatic omnipolar thermomagnetic switch with appropriate characteristics. This must also act as a general line disconnection switch.

Establishment of the electrical power supply line to the point of where it connects to the unit is the responsibility of the Client. The dimensions of the electrical energy power supply line must be determined in accordance with the electrical power used by the unit (see Technical Specifications).

- Remove any metal objects worn: rings, watches, bracelets, earrings, etc.
- Check the electrical diagrams before carrying out the connection
- Check that the voltage supply is as specified on the plate data.

- Tell the operator where the switch is so that it can be reached quickly in an EMERGENCY.
- To guarantee correct operation, the maximum voltage variation must be between +/- 6% of the nominal value.
- Check that the power line has appropriate section cables, is protected against overcurrent and dispersions towards earth, in compliance with current standards.
- In the event of an interruption to the electricity supply, check that all store electrical appliances can reboot without causing the overload protections to intervene. If not, alter the system in order to differentiate between the start-up of the various devices.

The installer must supply the anchorage devices for all cables in and out of the unit.

- Avoid having the casing come into contact with the electrical panel to avoid electric shocks which could cause injury or death.
- Check that the connectors of the illumination (shelves, ceiling, superstructure) are inserted properly and blocked in their sockets so as to avoid disconnection during cleaning and maintenance operations which could lead to electrical shocks harmful to the operator.

The automatic thermomagnetic switch should be designed so as not to open the neutral circuit without simultaneously opening the phases. In any case, the opening distance for the contacts must be at least 3mm.

13.Probe placement - *specialised technician* -

The probes are already placed on the unit and are as follows:

Sout	Air delivery control probe
Sdef	End defrost thermostat control probe
Sin	Air intake control probe

- Temperature probe: NTC IP67 L=4000 code 04510153.
- The Sout-Sin probes must be fixed in place using terminals and should not be insulated.
- The Sdef probe must be fixed in place in contact with the fins of the evaporator, between the 3rd and 4th tube (never in correspondence with the fan) using the stainless steel bulb block spring, code 02230021.

14. Start-up, temperature control and adjustment - *specialised technician* -

The refrigeration temperature is controlled using the mechanical thermometer (Rif. 22) or with the electronic control device (OPTIONAL) (Rif. 21).
Normally the controller is set in the factory during testing, but it is possible to alter the programming. To do so, please refer to the instructions given by the control device manufacturer.

15.Filling the unit - *qualified operator* -

To refill the unit, you must comply with some important rules:

- load the cabinet one door at a time;
- block the door open until loading is complete, avoiding continually opening and closing;
- arrange the goods in a uniform, orderly fashion, avoiding overloading the shelves (max. load 160 kg/m^2) (Rif. 14).
- the arrangement of goods, without leaving empty areas, guarantees optimum unit function.
- leave approx. 30 mm of space between the merchandise and the shelf above (Rif. 16).
- arrange the goods in a way that does not interfere with the circulation of the refrigerated air (Rif. 19)
- shelves can be placed in 2 positions **0°; -10°**(Rif. 14), upon request it is possible to

add a third position at -20°.

- The refrigeration unit is designed to maintain the temperature of the product displayed and not to lower it. Food products must only be introduced if already cooled to their respective storage temperatures.
- **DO NOT** introduce products that have been heated.
- **DO NOT** load the top of the unit with boxes, packages, or other things (Rif. 17).
- **DO NOT** climb on the front of the unit to ease loading operations, for any reason (Rif. 13). Use an appropriate and suitable ladder to reach the loading points. It is the Client's responsibility to ensure that all operations are carried out safely and in accordance with the norms in effect
- **DO NOT** obstruct the refrigerated air entry in an way (merchandise, price labels, price holders, etc.)

- The maximum allowable load for the shelves is **160kg/m^2** and for the tank is **350kg/m^2**
- **DO NOT** load the cabinet with all doors open at the same time (Rif. 27);
- Limit the time the doors are open during loading of merchandise.
- It is the responsibility of the client to use appropriate communication methods to inform customers how the doors work and not to climb on the front to reach products.
- To avoid merchandise sliding on tilted shelves, always use the containment edges.
- First use up the goods that have been stored in the unit the longest, before adding new arrivals (food stock rotation);

16.Defrosting and water discharge (Rif. 23)

The Osaka 2 line of refrigeration units is provided with a **simple-stop** system by means of the stopping of the refrigeration cycle.
Electric defrosting can be requested as an option (defrosting occurs by stopping the refrigeration cycle and the use of an armoured resistance in the evaporator).

16_1.Water discharge:

To drain the defrost water, you need to:
- have a floor drain with a slight incline (Rif. 24);
- install the provided siphon between the unit drainage pipe and the floor connection.
- hermetically seal the floor drainage area.

This will prevent unpleasant odours from forming within the unit, the dispersion of refrigerated air and possible unit malfunctioning due to humidity.

Periodically check that the hydraulic connections are still efficient, contacting a qualified installer.

17.Lighting

Internal lighting of the unit is obtained by OSRAM fluorescent lights. The light switch is beside the light fixture.

For greater energy savings, the cabinet can be ordered complete with low consumption LED lighting. This allows for:
- reduced lighting consumption
- reduced refrigerator load
- lifespan of lights: over 6 years
- uniform light intensity and colour
- improved lighting as temperature decreases.

18.Replacing bulbs (Rif. 18)

Replace the bulbs as follows:
- Turn off the unit's power supply.

- Unhook the light fixture from the shelf.
- Remove the methacrylate guard (1), slide out the bulb (2) from the housing, and replace it with the new one.
- Reinsert the light, making sure that the contacts are correctly placed in the appropriate openings.
- Reattach the methacrylate guard.
- Hook the light fixture back onto the shelf.
- Restore the electricity supply.

19.Glass doors

The unit has front wing doors in low heat-dispersion glass.
Sliding doors are available on request.
The doors in low heat-dispersion glass allow for a noticeable reduction in refrigeration energy, ensuring improved temperature level of foodstuffs and guaranteeing conservation quality.

(Rif. 26) The doors are provided with automatic closure and close automatically starting from an angle of approx. 70°.
Beyond 70° the doors will be in stand-by -- essentially they remain in place in order to allow for loading or cleaning operations. To unblock them and close the doors, simply accompany them to the closed position.

- In case of difficulty in opening or closing, **DO NOT** force them but try to find the cause of the malfunction.
- Avoid actions not envisaged for the closing and movement system.

20.Maintenance and cleaning - *qualified operator* -

BEFORE CARRYING OUT ANY MAINTENANCE WORK OR CLEANING, FIRST DISCONNECT THE UNIT FROM THE VOLTAGE SUPPLY BY MEANS OF THE GENERAL SWITCH. ALWAYS WEAR PROTECTIVE GLOVES FOR CLEANING.

Food products can deteriorate due to microbes and bacteria. Respecting hygiene norms is essential in order to guarantee protection of consumer health, as well as respecting the chain of refrigeration, for which the sales point is the last controllable ring.
Cleaning operations must include:
1 - **WASHING** (removing grease, removal of about 97% of the dirt)
2 - **DISINFECTING** (using appropriate detergents on the surfaces to remove any pathogenic micro-organisms that might remain after washing).
3 - **RINSING**
4 - **DRYING**
Cleaning the refrigeration units is carried out as follows:

20_1.General instructions

- **The surfaces to be cleaned and the detergents and water used for cleaning must not exceed a maximum temperature of 30°C.**
- use only neutral type detergents
- **DO NOT** use acid or alkaline detergents (e.g. bleach) which could corrode the surface
- **DO NOT** use abrasive products, chemical/organic solvents, or pointed tools that could damage the unit's surfaces.
- **DO NOT** use detergents with unknown chemical compositions
- **DO NOT** spray water or detergent directly onto the electrical parts of the unit and avoid wetting fans, light fixtures, electrical cables, and all electrical equipment in general during cleaning operations.
- **DO NOT** touch the unit with wet or damp hands or feet
- **DO NOT** use alcohol or similar products to clean the methacrylate parts (plexiglass).
- **DO NOT** aim the jet directly at painted or plastic-coated surfaces
- **DO NOT** apply the products directly onto the surfaces to be cleaned
- **DO NOT** use steam cleaning equipment
- **DO NOT** use excessive force during cleaning operations
- avoid contact with or inhaling vapours emitted from acid, alkaline or ammonia products contained in flooring detergents which may oxidise or corrode stainless steel.

- if internal cleaning is done with water jet cleaners (Rif. 11), use a LOW PRESSURE system (max 30 bar) with an appropriate capacity to remove any residue present. Excessive pressure could damage the surfaces.
- keep a minimum distance of 30 cm from the surfaces being cleaned (Rif. 11).
- **DO NOT** bring the jet too close to the dirt, it can cause injury to the operator and contaminate parts that have already been cleaned, as well as the environment (Rif. 12).

20_2.Cleaning of external parts (Daily/Weekly)

- On a weekly basis, clean all the external parts of the unit using neutral detergents for domestic use that are compatible with the surfaces to be cleaned, or use warm soapy water (max 30°C), and remove all traces of detergent.
- Rinse with clean water and dry using a soft cloth.

20_3.Cleaning of internal parts (Monthly)

Cleaning the unit's internal parts is done to destroy pathogenic micro-organisms so as to ensure the protection of the merchandise.
Before beginning to clean the inside of the unit, it is necessary to:

- Turn off the power supply
- Completely remove all merchandise inside.
- Remove all the removable parts, such as display plates, grills, etc.
- Wash with lukewarm water (max 30°C).
- Disinfect using a detergent with an antibacterial component.
- Carefully clean the tank, drip, and water discharge protection grill, eliminating all foreign bodies that may have fallen into the suction grill, lifting the fan plate if necessary.
- Carefully dry using a soft cloth.
- If any ice has formed, contact a qualified refrigeration technician for assistance.

20_4.Cleaning the "honeycomb" (Rif. 7)

- The honeycomb must be cleaned every 6-8 months, based on sales conditions.
- It can be cleaned using a vacuum cleaner or can be removed and washed using soap and water.
- It must be completely dry before being re-attached.
- The honeycomb must be attached at the same angle.

20_5.Cleaning glass parts

- **DO NOT** use hot water on cold glass surfaces, as the glass could shatter and injure the operator.
- **DO NOT** use rough or abrasive materials or metallic scrapers that could scratch the glass surfaces
- **DO NOT** use dirty cloths

- Use a soft cloth with a neutral detergent or soap and lukewarm water (max 30°C).
- Immediately remove all traces of water and detergent with a dry cloth in order to avoid the formation of marks and to avoid the liquid reaching the gaskets, frame, or the hinges of the glass doors.

20_6.Cleaning stainless steel parts

Certain situations may lead to the build-up of rust on steel surfaces:

- steel implements left on surfaces that are damp, lime scaled, not fully rinsed after using chlorine- or ammonia-based detergents, encrusted with pieces of food, salt/ saline solutions, or dry residue from evaporated liquids.

Recent marks and rust:

- clean with shampoo or neutral detergents using a sponge or cloth. When done, remove any detergent residue, rinse well, and carefully dry the surfaces.

Old marks and rust:

- use chemical substances for stainless steel that contain 25% nitric acid, or similar substances.

Stubborn marks and rust:

- sand or shine using a stainless steel brush. When complete, wash using detergents and dry carefully. This may produce surface scratches due to abrasive cleaning.

20_7.Cleaning aluminium parts

- **DO NOT** use acid or alkaline detergents (e.g. bleach) which could corrode the surface
- **DO NOT** use rough or abrasive materials or metallic scrapers that could scratch the aluminium surfaces
- **DO NOT** use steam cleaning equipment
- **DO NOT** use dirty cloths

- Use a soft cloth with a neutral detergent or soap and lukewarm water (max 30°C).
- Immediately remove all traces of water or detergent using a dry cloth in order to avoid the formation of marks.

All cleaning operations, including disinfection, rinsing and drying must be performed carefully, removing all traces of water or detergent so as to avoid the proliferation of bacteria that is harmful to health. Parts left to dry with residual detergent of disinfectant may be damaged.

Remove any elements such as sponges, clothes, detergent residue, or water from the floor that could cause slipping and accidental falls.

20_8.Parts inspection

Once cleaning, disinfection, rinsing, and drying operations have been completed, carefully check that all the parts are perfectly clean and dry and have not been damaged or excessively worn. If necessary, replace them.
Attach the elements once perfectly dry and restore the electrical power supply. Once the internal operating temperature has been reached, the unit can be loaded with the products to be displayed.

21.Dismantling the unit - specialised technician -

The unit must be disposed of in accordance with your country’s waste management

legislation and in respect of our environment. This product is considered by current legislation as hazardous waste. It must therefore be collected separately and cannot be treated as household waste nor sent to a landfill. Before disposing of the unit, the coolant must be collected and the lubricant oil removed. This product consists of 75% recyclable materials. Materials used in construction:

- Enamelled steel:	uprights, shelves, feet
- Copper, Aluminium:	refrigeration circuit, electrical system and light fixture
- Galvanised sheet metal:	lower panels, enamelled panels, base structure, shelves, trays
- Polyurethane foam (H_2O):	heat insulation
- Tempered glass:	glass sides
- Wood:	side frames foamed tank
- PVC	Bumpers and handrail
- Polystyrene	Heat formed shoulders
- Polycarbonate	fluorescent lamp guard

- The user is responsible for delivering the product for disposal to the collection centre specified by the local authorities or manufacturer for the recovery and recycling of materials.
- All these operations , as for transport and waste processing, should be performed by authorised, specialised personnel only.

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